

Dear Mr. French:

I am an environmental engineer at a local air quality agency in Nevada and listened with interest to your recent webinar presentation on Subpart EEEEEEE of Part 63. In my free time I also pan and prospect for gold as a recreational activity. I have an urgent comment that your proposed rule needs clarification on insignificant sources. I am an expert in small scale gold mining and serve part time as the assistant editor of a magazine which caters to small scale gold mine operators. The problem I see in your rule development is that you took input from large operators like Barrick and Newmont, but made no effort to include all the affected parties, including small scale operators (who use different processes and have no mercury emissions).

Your research was based on state programs which have filters to screen out and ignore sources of very small or insignificant emissions. There is a problem in that your proposed rule does not have any de-minimis limit, therefore all of the smallest gold processing operations, which emit zero mercury but use a melting furnace, are subject to the same rules and costs of compliance as those that actually emit tons of mercury. As written, and I will demonstrate, your proposed rule will require compliance and reporting not just from 23 large gold mine sources nationwide, but from thousands of individuals, small operations and even analytical testing labs which emit zero or near zero (less than one tenth of a gram) of mercury per year. The costs of control and compliance for these small operations will be in the hundreds of millions of dollars per pound of mercury controlled (a ridiculous figure) because they emit essentially zero mercury. I believe control of mercury from large gold mine sources may well make sense, but from tiny operations that emit no significant mercury, such rules make no sense whatsoever. Additionally, because they are subject, the rule will require these thousands of individuals and small operators to obtain a Federal Title V permit, which also makes no sense. I do not believe that the regulation of thousands of tiny operations which emit essentially zero mercury was your goal in drafting this regulation, but that is the sort of problem that occurs when the final rule is rushed and all of the affected parties are not included.

In all of the operations which emit significant mercury, a chemical leaching agent (almost always cyanide, though there are a few exceptions) is used to dissolve gold out of the ore. The problem occurs when the chemical leaching agent that dissolves gold also dissolves any mercury present in the ore. During processing to extract the gold and produce a finished product, this mercury may be released to the atmosphere at a number of points during processing depending on the methods used. The rule should clearly exempt operators which do not use these leaching processes, as they have no significant mercury emissions.

Here are four examples of gold mining operations that will be subject to this rule as written, but have no significant mercury emissions:

**1. Assay and testing labs:** Approximately 50 labs nationwide perform small bench scale testing of gold ores. The leach and test methods used at these labs essentially duplicate the leaching methods used to process gold ores at the mines, but on a far smaller scale. They also have furnaces which are used in ore testing and melting/smelting. Based on the proposed wording of 40 CFR 63.11651, they are subject facilities. As analytical labs, they

are not exempt under section 112(c)(7) of the Clean Air Act (CAA). However, instead of processing thousands of tons of ore per day as is done at the mines, they process perhaps 5 to 10 tons of ore per year. As a result, while they use many of the same methods, their mercury emissions are miniscule, perhaps one millionth of what a typical mine would emit.

**2. Small placer mines:** Roughly 100 small commercial operations nationwide process gravels to extract placer gold. (Placer gold is loose nuggets and particles of free gold found in gravels). These may employ 2 to 10 individuals. Many are seasonal and a significant percentage of them are located in Alaska. Because they process “gold ore” (gold-bearing gravels) and most melt the gold they recover into bar form before it is sent to a refiner, they are subject to this rule. However, as placer gold contains little if any mercury, their mercury emissions range from zero to miniscule.

**3. Small non-leaching hard rock mines:** There are some small hard rock mines which do not use any leaching in processing their gold ore—perhaps 20 nationwide. They produce concentrate using gravity-based or flotation methods. The flotation product is sold to a smelter, and the gravity product (which is mostly metallic gold—like the placer) is melted into bar form before it is shipped to a refiner. Because they process “gold ore” and melt the metallic gold they recover into bar form before it is sent to a refiner, they are subject to this rule. As no leaching occurs, what traces of mercury that are found in the ore, stays in the ore and is not released. Because the metallic gold they recover, like the placer, contains little if any mercury, their mercury emissions range from zero to miniscule.

**4. Individual prospectors and recreational operators:** There are literally tens of thousands of individuals who pan for gold on a semi-recreational basis throughout the nation. With the high price of gold this number is increasing. They range from weekenders to retired folks who supplement their incomes with the gold they find. Because they process “gold ore” (gold-bearing gravels) and many melt the gold they recover into bar form before it is sent to a refiner, they are subject to this rule. Their actual mercury emissions are zero. I myself pan for gold on a recreational basis and while I may recover only a few ounces per year, I do melt the gold in a small electric furnace I own. If the rule goes through as written, I will need a Title V permit for the nanogram of mercury I might emit annually. That really makes no sense, and I don’t think this was your intention in writing this rule.

I strongly urge you to include in the final rule the all of the following exemptions:

**1. Gold Mining operations that produce less than 100 pounds of concentrate per year.** (This would exempt analytical labs that perform small bench scale processing tests on gold ores)

**2. Gold Mining operations that do not leach or dissolve gold.** (This exempts placer and other non-leaching operators including both small commercial efforts as well as individual recreation-type prospectors)

**3. Gold Mining operations that process less than 1,000 tons per year of gold ore.** (This would exempt certain small scale pilot plants and related testing operations)

These exemptions will not reduce the effectiveness of the rule in controlling mercury emissions or lead to increased mercury emissions, as all the large subject sources with significant emissions will still be subject to the requirements of the rule. However, exemptions for sources with near zero emission rates will exclude a large number of small operators who do not emit any mercury, and which I do not think you intended to include in

the rule. It makes no sense to require a title V permit from an individual who pans for gold on weekends.

I appreciate your consideration in adding these exemptions. They will help to focus the rule on those who actually do emit significant mercury as a part of their operations.

Sincerely,

Chris Ralph